



# MUSEUM GUIDE: WORKING WITH ENGINEERS

## CONNECTING TO ENGINEERS: STEP ONE

One of *Dream Big's* primary goals is to connect engineers and engineering organizations to the film's museum and science center exhibitors. Many of you already have experience working with the engineering community and at the same time have expressed enthusiasm for growing those relationships or beginning new ones. A comprehensive plan has been developed through *Dream Big* partners to facilitate such relationships.

After you have reviewed the educational materials and programs available through *Dream Big* and thought about some of your goals for the film's exhibition, **step one is to contact Gwen Hearn from DiscoverE.** Gwen is the project's full-time outreach coordinator whose work is to connect museums and science centers with engineers or organizations that have expressed interest in *Dream Big*. Gwen is also the first stop for engineers who want to work with you.

**GWEN HEARN**  
[Gwen@DiscoverE.org](mailto:Gwen@DiscoverE.org)  
**703-684-2861**

(For all of your other educational outreach and marketing inquiries, continue to contact MacGillivray Freeman.)

## DREAM BIG PARTNERS

Like museums, where each is unique in its programming, goals, and needs, engineering organizations vary in focus, target audiences, and reach. As you review the list of *Dream Big* partners, you'll see one unifying factor: their commitment to engaging kids and families in engineering.

It's important to know the active groups in your area, because they may be able to:

- Provide volunteers from their local member and student chapters.
- Help promote the film.
- Host events in your market.
- Sponsor your events.



## DiscoverE – [www.DiscoverE.org](http://www.DiscoverE.org)

DiscoverE is a key partner to the *Dream Big* project. It is both a coalition of 100+ engineering organizations and companies, and a hub for volunteers who want to work in their communities. This international organization, which also creates large-scale engineering events like Engineers Week, Future City, Girl Day, and Global Day, provides how-to training resources for engineers, educators, and career counselors, including self-guided training tutorials and other resources.

**Dream Big Opportunities:** DiscoverE will connect film exhibitors with engineer volunteers in your region and vice versa. It manages the website for *Dream Big* outreach programs and materials and contribute to the outreach program content.

### Engineers as Volunteers (as told by DiscoverE)

- They want to do a good job and have fun.
- They will show up on time.
- They will read everything you send them (and will even point out your typos).
- They'll have varying experience working with the public and with kids. Some are already comfortable. And some need a little bit of guidance. Many of the organizations they're associated with have training available.
- Engineers are great problem solvers and will find a way to make things happen—that's what they do! So, if they're interested and willing, get them involved in the planning, as actual partners. You'll unleash an amazing amount of energy and resourcefulness.
- Remember: Engineers are quick learners but often do not have a lot of extra time—so be sure to make any training and guidance efficient.

## American Society of Civil Engineers (ASCE) – [www.ASCE.org](http://www.ASCE.org)

A sponsor and partner, ASCE leads the *Dream Big* charge. They have been promoting, coordinating, fundraising, and planning for the *Dream Big* film and outreach program since its inception. With 150,000 members in 177 countries, ASCE members engineer the built environment while protecting and restoring the natural environment. Many volunteers from ASCE are experienced in community outreach and may be a good resource for materials or demonstrations for *Dream Big* activities. There are civil engineering clubs for high school students, and ASCE hosts National Steel Bridge and Concrete Canoe competitions for college students. Check these out in your area.

**Dream Big Opportunities:** Volunteers, resources, advisory, structural contests for kids (Popsicle bridge contests), connections with BIG projects in your community and with universities/lab facilities or experiments that can be reproduced for museum or science center visitors.

## National Society of Black Engineers (NSBE) – [www.NSBE.org](http://www.NSBE.org)

(Acronym pronounced “Nez-bee”)

This primarily African American society has chapters at every stage of life, including their NSBE Jr. members, who range from grades 3 through 12. Most NSBE engineers became members in college, so they may also have links to sororities and fraternities in the black community. Members may have great connections to faith-based communities, as well. The organization also has members in Nigeria, South Africa, and the Caribbean.

**Dream Big Opportunities:** Bringing NSBE Jr. members to a *Dream Big* screening, reaching underserved kids, diversity in role models, and using the film as an intergenerational connection between engineering professionals, college students, and younger kids.

**50K Coalition:** NSBE leads a new initiative that aims to produce 50,000 diverse engineering graduates annually by 2025. The Coalition includes SWE (Society of Women Engineers), SHPE (Society of Hispanic Professional Engineers), and AISES (American Indian Science and Engineering Society).

### **Society of Women Engineers (SWE) – [SocietyofWomenEngineers.swe.org](http://SocietyofWomenEngineers.swe.org)**

(Acronym pronounced “Swee”)

This 65-year-old international diversity organization promotes women and engineering in all engineering disciplines and is made up of collegiate and professional members. SWE is well-known for scholarships and doing large-scale, hands-on engineering events at the organization’s annual conferences. More than 4,200 girls are SWENexters nationwide—girls 18 and under who are committed to being engineers.

**Dream Big Opportunities:** Girls Night Out support, mentors and role models, SWENexters engagement, volunteers for activities.

### **The Institute of Electrical and Electronics Engineers (IEEE) – [www.IEEE.org](http://www.IEEE.org)**

(Acronym pronounced “Eye-Triple-E”)

IEEE is the world’s largest technical professional organization dedicated to advancing technology for the benefit of humanity. Through its highly cited publications, conferences, technology standards, and professional and educational activities, IEEE is the trusted voice on a wide variety of areas ranging from aerospace systems, computers, and telecommunications to biomedical engineering, electric power, and consumer electronics. IEEE has 425,000 members in 160 countries.

**Dream Big Opportunities:** Teacher training, experience working with students and schools, content/technical advisors, mentors and role models, activities volunteers, connections to universities and faculty.

### **The American Society of Mechanical Engineers (ASME) – [www.ASME.org](http://www.ASME.org)**

(Acronym pronounced “A-S-M-E”)

Student membership is active and very engaged on college campuses. ASME wants to help the public (especially K–12) understand what mechanical engineers do and how they think and see the world. INSPIRE, a STEM school curriculum, is an ASME program operating in 44 states and 600 schools with 21,000 students, often in CTE (career, technology, and education) classrooms.

**Dream Big Opportunities:** K–12, volunteers, connecting INSPIRE classrooms.

### **American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) – [www.ashrae.org](http://www.ashrae.org)**

(Acronym pronounced “Ash-ray”)

ASHRAE members work to promote the advancement of technology for the built environment. They focus on energy efficiency, building systems, indoor air quality, refrigeration, and sustainability.

## **American Society of Agricultural and Biological Engineers (ASABE)**

– [www.asabe.org](http://www.asabe.org)

(Acronym rhymes with “Wasabi”)

The American Society of Agricultural and Biological Engineers is dedicated to the advancement of engineering and technology for agricultural, food, and biological systems. Found in more than 100 countries, ASABE members improve lives and livelihoods everywhere, through the sustainable production, conservation, and innovative use of biorenewable products.

## **IDEAS FOR INVOLVING ENGINEERS IN *DREAM BIG***

The following ideas are meant to launch your thinking about engineers’ involvement and are not meant to be a comprehensive list. Brainstorm even more ideas with your engineer volunteers.

**Contact Gwen at DiscoverE to get connected to the engineering organizations, companies, and/or universities in your area.**

**[Gwen@DiscoverE.org](mailto:Gwen@DiscoverE.org)**

**703-684-2861**

### **1. USING ENGINEERS AS VOLUNTEERS**

#### **Plan the Film’s Opening Before the Film Opens**

- Organize a planning committee. Bring together museum staff, representatives from the local engineering community, and education groups. To activate the largest network, be sure to include as many engineering organizations as possible.

#### **Celebrate Opening Week or Weekend**

- Opening week will be an exciting time to engage volunteers in your activities now and in the future.
- Ask your engineer partners to send out an announcement to their members and contacts to promote the film opening.

#### **Host Activities During the Film’s Exhibition**

Engineers are a great resource as you plan your programs. Ask engineers to:

- Facilitate hands-on engineering activities with visitors for a day or a weekend.
- Sponsor an activity station at an Engineering Family Day, provide a speaker for a *Dream Big* Girls Night Out, or volunteer at a Camp-in/Overnight—as experts for a particular demonstration and/or as role models for career-oriented presentations.
- Participate in a summer engineering camp for youth.
- Be the guest star at a Science Café or a museum speaker series that spotlights engineering careers, achievements, or hot topics in engineering.
- Serve as advisors for how to transform or augment a current exhibit with engineering. For instance, how can an exhibit about the human body inform visitors about bioengineering?
- Bring local engineering projects to the museum. Look for local projects that might not normally be thought of as engineering, such as city planning endeavors or wastewater purification projects. Connect the “BIG” projects in the film to “BIG” projects in your community. Volunteers could help host these displays or community Q&A sessions.

## 2. PROMOTING THE FILM—MAKE IT A BLOCKBUSTER!

Include your engineering partners in your promotion plans. They can help by:

- Promoting the film through their communication channels, including social media
- Connecting you to local engineering companies, universities with engineering colleges, and state or federal departments
- Finding opportunities to highlight all of the different types of engineering happening in your community
- Talking to the media about the BIG engineering activities happening in your community

## 3. HOSTING SPECIAL SCREENINGS

- Host premiere screenings with engineering organization members, local corporate sponsors, DiscoverE affiliate members, and other *Dream Big* partner organizations.
- Discuss with your engineering contacts the idea of hosting special screenings for their members or partners. Would they like to host screenings for the members of their student chapter? Professional members? Are there other groups they'd like to make sure see the film? Educators, church groups, youth groups, specific programs such as Future City teams or NSBE Jr. chapters?
- Share your expertise hosting special events and the various formats they can take, such as cocktail receptions, meetings, group screenings, and other social opportunities during days or evenings.
- Let engineers know that you can provide space for groups to gather before or after a screening.
- Be sure they know about your school groups program.
- Invite engineers to an event just for kids. It's always fun to watch a film with a theater full of children, and it will make them more excited about the film and its potential, too.

## 4. SPONSORING A DREAM BIG PROGRAM OR ACTIVITY

- With your engineering contacts and volunteers, discuss the opportunities to reach and impact underrepresented groups:
  - Invite them to sponsor the ticket costs and/or transportation.
  - Purchase the consumable materials used in workshops or at special events.
  - Sponsor a special event, such as Girls Night Out, or other events aimed at underrepresented students.
  - Sponsor a special screening and training program for teachers and afterschool providers who work with disadvantaged students.
- Share your process for purchasing group rate tickets for companies, children's schools, or other groups.

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